Common Resources

SC4 RESOLUTION 403 (San Francisco):

SC4 requests QC to revise the SC4 methods documents to allow the use of parts of other ISO TC184/SC4 standards as Common Resources in the development of STEP Application Interpreted Models, and other SC4 standards.

SC4 requests WG12 to develop procedures to enable and control the use of other ISO TC184/SC4 parts as Common Resources in the development of STEP Application Interpreted Models, and other SC4 standards.

Common Resources
Salient Characteristics

1. Shall minimize redundancy
2. Some level of standardization achieved (at least ***CD*** for parts that are not 10303). Stable content is required.
3. Excludes implementation methods
4. Enables interoperability between SC4 standards
5. General applicability within industrial data exchange
6. Satisfies some identified need in SC4 standards
7. WG12 will have responsibility or joint responsibility for development and maintenance of the Common Resource

Common Resources
Salient Characteristics

8. Shall be written in EXPRESS (or used as EXPRESS) as a Data Model
9. Resource will have documentation on how to use in an SC4 standard (or is recognized as an ISO 10303-40/100/500 series in 10303-1). Documentation can include:
   - SC4 approved Standing Document or
   - Annex to an SC4 approved document or
   - SC4 approved Usage Guide
10. Unique Name Space for Common Resource
    - WG12 N324

Common Resources
Salient Characteristics

11. Common resources (CRs) are reusable data specifications that can be used in SC4 standards.

    a) When used, some CRs are subject to interpretation that will include constraints on their population, usage and meaning.

        Example: ISO 10303 IRs are "interpretable CRs". ”Interpretable" to mean that the CR can be used to satisfy a range of different industrial data requirements, based on different usages and constraints in different application contexts.

    - Can be used in another interpretable CR
    - Can be used in a non-interpretable CR
    - Can be used in a SC4 standard

Common Resources
Salient Characteristics

b) When used, some CRs are defined for usage "as is", without constraint on their meaning.

Example: ISO 10303 AICs are "non-interpretable" CRs

- Documentation will identify usage constraint(s)
- Can be used in another non-interpretable CR
- Can be used in a SC4 standard

Common Resources
Salient Characteristics

12. Each CR is part of:
    - the STEP integrated resources or
    - the STEP AICs or
    - or is the subject of a well-defined interpretation practice that avoids ambiguity of definition, usage, or constraint when used (One CR can capture - in whole or in part - an interpretation practice with respect to the usage of another CR).

Common Resources
Salient Characteristics

13. Candidate CR shall be reviewed by WG12 to determine its adequacy with respect to integration/interpretation with other SC4 standards
14. WG12 (in concert with QC) will maintain and publish necessary integration and interpretation practice(s) for its use in SC4 standards (Development may be from any WG)
15. PLs and WG Conveners should identify candidate Common Resources
16. PL and WG12 shall address changes in the document to make the document usable as a Common Resource

Applicable Documents

- DRAFT NISTIR - STEP Integration Methods - October 1, 1990
- NISTIR 4528 - Resource Integration: Semantic and Syntactic Rules - Hard copy Received April 1991
- ISO TC184/SC4/WG4 N33 - Integrated Resources Qualification Manual - January 1992
- ISO TC184/SC4/WG4 N53 - AP Integration Practices - AIC Development - October 13, 1992
- TC184/SC4 N534 - Guidelines for application interpreted construct development - 97/10/01
- ISO TC184/SC4/QC N068 - Interpretation of PLIB Services - 1998-06-16
- ISO TC184/SC4/QC N079 - Procedures for application interpretation - 1998-09-23
- ISO TC184/SC4/QC N125 - Interpretation methods and practices training - 1999-11

Notes: SC4 N534 was balloted, all others have been used as a guide.

Probable Common Resources

- ISO 10303-40, 100, and 500 series
- ISO 10303-1000 series Foundation Modules
- 13584-20 - Logical resource: Logical model of expressions
    - Harmonized with ISO 10303-50 requirements
    - Being harmonized with ISO 10303-42e2
    - Being harmonized with ISO 10303-108
    - FDIS Level
- 15531-42 - Time Model
    - Harmonized with ISO 10303-41e2
    - Not CD yet
    - May need further integration review

Candidate Common Resources - Needs Further Evaluation

- 15531-32 Resource Model
  - Good candidate
  - Not CD yet
- IEC 61360-2:1998, Standard data element types with associated classification scheme for electrical components - Part 2: EXPRESS Dictionary Schema
  - Needs to be evaluated based upon 13584-42 review
- ISO TC184/SC4/QC N068 - Interpretation of PLIB Services
  - This could be modified into a Standing document that can be used to satisfy the above reqmt

Probably Not Candidate for Common Resources

- 13584-24 - Logical resource: Logical model of supplier library
  - Single EXPRESS schema
  - Schema is very similar to an AP that could be used for supplier library modeling and exchange
- 13584-26 - Logical resource: Supplier Identification
  - Some aspects written in EXSPRESS (Not an entire EXPRESS schema)
  - A usage guide for coding of standards parts libraries
  - Identified coding of ISO 6523
  - Uses ISO 6523:1994 version
  - Doesn’t work with ISO/DIS 6523:97

Probably Not Candidate for Common Resources

- 13584-42 - Description methodology: Methodology for structuring part families
  - This document takes the EXPRESS schema defined in IEC 61360 and provides a mapping of 13584-42 concepts into IEC 61360
  - Schema is Informative in the Annes
  - Schema appears to be a replication of IEC 61360
  - Issue is that it replicates IEC 61360 - Need to evaluate 61360
  - Could be used as CR with a modified QC N068

Email Feedback/Issues

- Making a document a CR should be a formal SC4 ballot (not an SC4 resolution).
- Who is going to know what a CR is? People outside of SC4 would not have visibility
- ISO 10303-1 identifies IRs. Confusion factor on what will a CR be, what a IR will be.
- As to where CRs should be defined, I think it should be in either an SC4 document or resolution.
- Salient characteristics should at least be in a WG12 document

Email Feedback/Issues

- Definition in ISO 10303-1:
  - 3.2.31 resource construct: a collection of EXPRESS language entities, types, functions, rules and references that together define a valid description of an aspect of product data."
- Change or add to be:
  - A common resource is a part which contains Express constructs that define a valid description of product data that can be used or interpreted in all or a subset of (at least two) SC4 standards.

Email Feedback/Issues

- Evaluation of IEC 61360-2:1998
  - This has some of the characteristics of an AP. There is known overlap with ISO/IEC 10303-210. Recommend evaluation of overlap.
  - There is overlap with 10303-41.
  - There is potential overlap with 10303-42 (not sure about the exact situation here)
  - There is potential overlap with 10303-47
  - Some of the overlap occurs because standard data element types defined using the standard overlap with the above identified documents.

Next Steps

- Formally document Salient Characteristics for broader review by other Conveners
- Additional Tasks
  - WG12 strategy for developing the IRs, including integration and extension to meet the need of all SC4 projects, and the relationship with outside groups
  - State that IR interpretation shall be done by outside projects/APs/AMs